



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,897	02/04/2004	Narasimhan Gautam	15060-60	3893
<div>69949 7590 11/01/2007</div> <div>PATRICK W. RASCHE (15060)</div> <div>ARMSTRONG TEASDALE, LLP</div> <div>ONE METROPOLITAN SQUARE</div> <div>SUITE 2600</div> <div>SAINT LOUIS, MO 63102-2740</div>				
			EXAMINER	
			ROOKE, AGNES BEATA	
			ART UNIT	PAPER NUMBER
			1656	
			MAIL DATE	DELIVERY MODE
			11/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/771,897	Applicant(s) GAUTAM ET AL.	
	Examiner Agnes B. Rooke	Art Unit 1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 37-45 is/are pending in the application.
- 4a) Of the above claim(s) 7-34, 37 and 39-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 35, 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This non-final office action is in response to the paper filed on 8/13/2007.

The amendments of the claims filed on 8/13/2007 are acknowledged.

Status of Claims

Claims 1-35 and 37-45 are pending. Claims 1-6, 35 and 38 are under consideration. Claims 7-34, 37, 39-45 are withdrawn.

Rejections Withdrawn

The rejection of claims 35 and 36 under 35 USC 112, second paragraph, is withdrawn in view of the amendments to claim 35, and cancellation of claim 36.

The rejection of claims 1-3 under 35 USC 103(a) as being unpatentable over Devreotes et al. in view of Wittamer et al. is withdrawn in view of the amendments to claim 1.

New rejections necessitated by the Amendments to Claim 1.

New Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one

Art Unit: 1656

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, a new structure of the G protein was presented in the amended claim, and it appears that Applicants introduced a new matter. Examiner interpreted the amended claim 1 as claiming two G protein subunits bound to two fluorescent or luminescent proteins, a structure that is different from the previously claimed or taught in the specification. Then these two G proteins and two fluorescent or luminescent structures are bound to YFP and CFP. If to the contrary, Applicants are urged to specifically point out in the disclosure the structure of the G protein subunit, as currently claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6, 35, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devreotes et al. (U.S. 2002/0048811) in view of Wittamer et al. (U.S. 2003/0104478).

Devereotes et al. teach receptor mediates activation of heterotrimeric G-proteins that is visualized in living cells by monitoring fluorescence resonance energy transfer

(FRET) between subunits of G-protein fused to cyan and yellow fluorescent proteins.

See Abstract.

In Example 1, page 4 in [0044-0045], Devreotes et al. teach fusion of yellow fluorescent proteins to the amino end of G protein subunit β ; also they teach fusing fluorescent proteins into G protein, such as $G\alpha 2$; further, FRET was used to observe the state of the G-protein heterotrimer in living cells. (See instant claims 4-6 and 35 and 38). Claims 4-6 are included in the instant rejection because the $\beta\gamma$ subunit complex is claimed in the alternative thus it is not required to be present in the biosensor composition.

Devreotes et al. do not teach G mammalian protein.

Whittamer et al. teach mammalian G protein, see [0008]; where the invention relates to a G-protein receptor and screening assays for the identification of candidate compounds and G protein coupled receptor signaling, see Abstract.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to substitute the G protein of Devreotes et al. with the G mammalian protein of Whittamer et al. since G proteins of different origin will have the same function and the same mode of operation when acting in a functional biosensor.

One would be motivated to use a mammalian G protein in a biosensor because such designs are known in the art and proven to be successful.

Applicants argued that neither Devreotes nor Wittamer describes or suggests a biosensor with one or two fluorescent proteins, and that in claim 1, the claimed G protein has two fluorescent proteins.

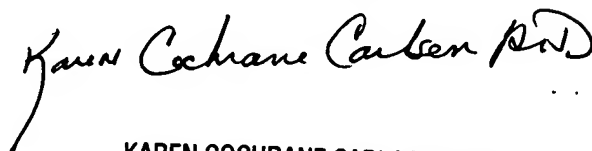
Examiner respectfully disagrees with Applicants because the aforementioned prior art teaches G proteins that are fused with yellow fluorescent protein and that other fluorescent proteins can be fused to a G protein. Also, claim 1 refers to a second fluorescent protein in the alternative. Therefore, the rejection is proper and is maintained.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agnes Rooke whose telephone number is 571-272-2055. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.



KAREN COCHRANE CARLSON, PH.D
PRIMARY EXAMINER

Application/Control Number: 10/771,897

Page 6

Art Unit: 1656

AR

A handwritten signature in black ink, appearing to be 'AR' with a stylized flourish.